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THE ADMINISTRATION
OF
EMERGENCY PROJECTS

By

Paul H. Roberts

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FOREST SERVICE 1952

PREFACE

Paul H. Roberts is eminently qualified to write on the administration of special emergency projects where his experience covers more than 15 years in positions of high responsibility. In 1948 he received a superior service award from the Secretary of Agriculture for his performance in these demanding positions. He served as acting director and director during the 8-year life of the Prairie States Forestry Project, which accomplished the planting of 222 million trees in 18,600 miles of shelterbelts in 242 counties in 5 States.

He was associate director of the Emergency Rubber Project (Guayule Project) from March 1942 to November 1943, and director from the latter date to September 1946. This wartime project was carried out under extreme difficulties, and shortages of equipment, materials, supplies, and manpower. Some 32,000 acres of plantations and the necessary mills to process the shrubs for rubber were established. On VJ-day the project had in its guayule plantations about 10 percent of all natural rubber in the United States.

In 1947 Mr. Roberts organized still another emergency project—control of a tussock moth outbreak on about 10 square miles of rough, forested country. Following some preliminary surveys and plans, the project was carried out in about 2 months—390,000 gallons of DDT were sprayed on 415,000 acres from airplanes, almost entirely killing the 1947 hatch of tussock moth and saving from damage 1½ billion board feet of timber valued at $5,000,000.

When it was necessary to initiate control measures to prevent the spread of a serious infestation of spruce bark beetles which were destroying thousands of acres of valuable Engelmann spruce timber in the forests of Colorado, Mr. Roberts organized and directed the project. In the 2-year period 1950–51, 885,000 trees were treated individually, 1,677,000 gallons of insecticide used, and 387 miles of road built.

Mr. Roberts retired at the end of 1951 from the position of Assistant Regional Forester in charge of range and wildlife management for the Northern Region of the Forest Service.

R. E. McArdle,
Chief, Forest Service.

THE ADMINISTRATION OF EMERGENCY PROJECTS

By

Paul H. Roberts

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The Forest Service over the years has been confronted with a succession of emergency projects of one kind or another. These projects demand a type of management in some respects uncommon to the usual methods of conducting Forest Service administrative activities. The purpose of this paper is to record some of the things which have stood out as particularly significant in obtaining optimum production on such operations. It is for whatever benefit it may have to the conduct of future projects.

Successful accomplishment of emergency project objectives is always the result of group effort. Sizable projects are Service-wide undertakings, regardless of location, and as such receive Service-wide backing and support. Accomplishments of the project organization are always the result of the application of the skills, resourcefulness, energy, and adaptability of an integrated group having a common purpose.

There is no intent to discuss herein all of the classical functions of management as they relate to these projects. Rather, the purpose will be to discuss functions, phases of management or of particular jobs which have proved to be of special significance in the conduct of emergency work. The emergency project will be treated in the collective sense, realistically, as it occurs, not as we would like to have it.

This discussion is limited to projects within my own experience and is directed chiefly toward the short-lived projects, such as Tussock Moth and Colorado Spruce Beetle, but much of it is applicable to longer-lived projects, such as Shelterbelt and the Emergency Rubber Project (Guayule). No two projects are ever alike. Each has its own individuality and special problems, but all have common characteristics which distinguish them from other types of emergencies, such as fires, which do create fearful situations, but for which we have a long history of research and administrative experience.

CHARACTERISTICS OF EMERGENCY PROJECTS

Emergency projects of the long-duration type (Shelterbelt and Guayule) were the result of a national emergency or a regional emergency with a national interest. Projects such as Tussock Moth and Colorado Spruce Beetle were for control of a threatened disaster to a local timber resource, but a diseaster which could have a serious effect on local, State, and regional welfare. Tussock Moth was of short duration (5 weeks) and Colorado Spruce Beetle has been of short seasonal duration each year.

All emergency projects have one or more of the following characteristics:

They are usually without precedent either as a whole or in various aspects such as (a) Character of work. Tussock Moth was the first large insect infestation in timber controlled by airplane spraying. Guayule was in large part new work to the Forest Service. (b) Size and scope of activity. The Shelterbelt was a large, regional undertaking, conducted during a period of unprecedented drought and other unusual climatic conditions. Guayule was regional in scope and was in response to a world war requirement. (c) Lack of established and tested procedures, methods, and practices and standards of performance for various phases of work.

Requirements for various types of equipment ordinarily used by the Forest Service are far in excess of Forest Service stocks that can be readily centralized.

Highly specialized materials not in ordinary use by the Forest Service may be required, and these may be in short supply Nationwide.

They have limitations and demand rapid and effective action. Time limits may be due to type of country and seasonal variations, the life cycle of an insect, available money, or other reasons.

Factual information as a basis for planning and for the action program is usually incomplete.

They always involve cooperation with other Federal agencies, State and local governments, and a variety of private interests.

They always present a direct challenge to the ingenuity, skills, resourcefulness, and particularly the adaptability of Forest Service personnel.

The very nature of emergency projects requires the ultimate in planning and organizing that can be accomplished with the information obtainable, and within the time available.

PLANNING

Usually the director and a few key assistants arrive on the scene after the general scope of the project has been determined, and after estimates have been submitted as a basis for appropriations, but before appropriations are made. The financial situation always creates an atmosphere of uncertainty, but this should not be allowed to interfere with the planning job. Planning must proceed just as if the money was in pocket. Funds are usually available about the time the action program should start, or sometimes later. Delay, however, will not allow time for the best planning.

There is usually a period of a few days during which the director and his immediate assistants must spend concentrated effort reviewing reports and maps, talking to those who have had to do with getting the project started, and generally obtaining as quickly as possible a good working knowledge of the proposed task, both over-all and in detail. Then the planning job should start with full force.

Time for thoroughgoing preparatory action is usually limited. There is, also, a buildup of tension and with it the urge to get action under way. This may result in a tendency to slight the planning job, but there is no substitute for careful and sound planning where each phase of the work is given thorough scrutiny. A time allowance for planning should be established. Sufficient manpower should be assigned to assure completing it on schedule.

The personnel who will be in key administrative positions, either on the director's immediate staff or in the field, should do most of the planning work or be in charge of some phases of it. This gives them a thorough indoctrination which they can get in no other way. Specialists in various lines should be called in if needed, and they always are needed. The planning must be just as thorough and complete as knowledge of all factors which affect the operation of the project will permit. A few things overlooked in the planning can easily threaten the successful accomplishment of the project, or can reduce the degree of accomplishment.

Precise planning is often difficult because of lack of complete and firm determinations of size of job and conditions affecting one or more phases of it, and also lack of reliable standards of performance, methods, and procedures. So one of the first steps in the initiation of planning is to agree on:

1. The size and scope of the work to be done within a definite time allowance. Size and scope will be determined from on-the-ground surveys and estimates and, of course, may be influenced by available funds or proposed funds. The time allowance may be governed by various factors, but it will have usually two major aspects: Total period allowable from beginning to close of work, and the best possible estimate of work days or hours within the over-all work period. Use of overtime should be a definite consideration. The use of overtime is a "must" for maximum production on all short-duration high-pressure projects. Analysis of long-time weather records will be important in making estimates of time allowance for most projects.
2. The best possible estimated performance standards, methods, and procedures the planning group or other sources of experience

can supply. Be sure each planner knows what these are, and then stick to them, even though conditions change before the planning is finished. In this way planning will be kept on a uniform base, and if changes are necessary, they can be readily made in the complete plan. If the base is subject to constant change during the planning period, uniformity between interdependent segments and in the over-all will be lost, and confusion, uncertainty, and delay will result.

3. An estimated average accomplishment by a unit of men and machines within a time factor. The job is not actually accomplished by maintaining a predetermined hourly or daily rate, Surges and lulls occur, and high accomplishment is the result of surges sustained over as long a time period as possible, and lulls cut as short as possible. In order to take full advantage of surges, when all phases of the operation mesh in high gear, sound planning should provide for a minimum 10-percent allowance over a liberal calculated need for all items of transportation equipment, and as much as 50 percent or more overage for some types of small equipment. For example, on the Spruce Beetle Project hand spray pumps were ordered which had to be manufactured before the size of the project was finally determined. As a result a considerable surplus over calculated requirements was obtained. Adjustments in organization of crews were made after the work started which resulted in both increased manpower on the pumps and an increase in production over the estimate. Also the pumps, which were new and untested, had structural weaknesses, large numbers were immobilized at times for repairs, and all the pumps obtained were needed and used.

After the size and scope of the job, methods and procedures, and performance standards and rates have been determined, the planning specifically should set up:

1. The entire organization down to crew composition out at the end of the line.
2. All requirements for headquarters, office space, equipment, housing for personnel, storage, construction, and any other such factors essential to efficient operation of the project.
3. The supply system from procurement of material to delivery to work crews, including transportation, transportation equipment, and all other pertinent equipment and material.
4. Definite time schedules for completion of the entire job and each phase of it. It is especially important early in the planning stage to set up time schedules for the organizing and construction stages preparatory to action on the major work of the project.
5. The first firm base for large-scale procurement action. Procurement on many items needed in the early stages of the work, in large volume then or throughout the project, and scarce items must start on the basis of the best early estimates that can be made. The estimates may be rough, but start anyway.
6. The first firm base for detailed estimates of financial requirements and a budget structure.

The early financial cast-up is of paramount importance and should be made just as soon as planning arrives at a point which will provide a reasonably firm base for it. The trial run may show that finances are inadequate for the size job contemplated or needed to accomplish a proposed over-all objective. If so, high-level decisions may be required concerning reorientation of the program and adjustments which will enable maximum accomplishments with available funds. Such adjustments may well involve every major phase of the project. It is essential that necessary reorientation of program and adjustments be made well in advance of initiation of full-scale action. The success of the project or the degree of accomplishment with available funds may hinge very largely on decisions made at this time.

Sound financial planning should allow a minimum over-all contingent of 20 percent to meet unforeseen exigencies and differences between estimated and actual costs. To some extent differences between estimates and actual costs will be compensating as between budget items, but this cannot be depended upon. Since success of the whole project, or the part undertaken for a given period, may be dependent on completion of the planned job, it is essential that financial estimates as a basis for appropriations also should be as liberal as can be reasonably justified. There is one thing certain about making financial estimates for emergency projects—no man or group of men has yet been able to foresee all the exigencies and costly trials and tribulations that can turn up on any one project.

ORGANIZING

There are two general aspects of organization of an emergency project: (a) The general scheme within the regular organizational setup of the Forest Service, and (b) its internal organization. The purpose here is to indicate some elements that have proved to be significant, rather than present any startling or mysterious truths, new or old, on the form of organization or organizing work.

The General Scheme of Organization

The Forest Service has followed the principle of setting up emergency projects as distinct organizational units of operation, either (a) under the general direction of the Chief's office, as with Shelterbelt and the Emergency Rubber Project, or (b) within a region, as with Colorado Spruce Beetle and Tussock Moth. Occasionally there is some resistance, generally from the uninitiated, to the above principle, but it is a must for high-order accomplishment. No other system is tenable for any emergency project worthy of the name.

Centralized and direct control of the project organization and operations in a director and delegation of concomitant authorities and responsibilities are essential to successful accomplishment. Emergency projects are so demanding of both individual and group time and effort that they cannot be managed with required effectiveness as part-time jobs within the regular setup of the Forest Service, or under a system where the director of the project has only functional control and authority. Emergency projects cannot be handled as "piecework." The director must have direct control and the authority that goes with it. He must be depended upon to seek advice when necessary on high-level policy decisions, but the exigencies of the work are such that on innumerable occasions he will need to make important operating decisions without opportunity for advice outside his own immediate organization.

The regular functional division personnel of the Forest Service can and do render invaluable assistance and advice in their respective fields, but their services should be so limited insofar as the internal organization of the project is concerned. Any extension of their regular functional authority and responsibility into the control and operation of the emergency project will inevitably result in conflicts, loss of control by the director, confusion as to authority and responsibility, and disruption and delay.

Principles of Organizing the Project Operations

Emergency projects are organized to direct the timely, sustained, and efficient application of the total potential power within the project organization toward the accomplishment of a specific objective. (On long-duration projects there may be more than one over-all objective for doing the work, but even here the organizing within the project is usually directed toward successful accomplishment of one major objective.)

Forest Service personnel who are assigned to key positions on emergency project operations are experienced in both the theory and practice of meeting Forest Service organizing problems, so the general job of organizing is not usually of extraordinary concern. Therefore, the purpose here will be to discuss a few general principles, which seem to hold good for all emergency projects, and the importance of a thoroughgoing organization of such significant functions as procurement, supply, and contractual services, personnel, and equipment maintenance.

General principles are:

1. Organization should be complete and adapted to the peculiar requirements of the job from the over-all form to the details necessary to the efficient performance of each particular task. All gaps must be closed. Seemingly unimportant details may become important impediments if performance of them is not well organized.
2. The form of organization should be as simple, and supervisory and facilitating personnel as limited at all levels, as the nature of the particular project will permit. However, in the beginning any emergency project requires a much larger staff than it will after it settles down. Manning may need to be very heavy in the planning and initial action stages of the project work to insure that all essential tasks are accomplished on time, but as the work progresses and the organization swings into well-geared and systematic performance, excess overhead should be fitted in if needed elsewhere, or dispensed with. The best abilities of administrators are required for skillful organization and control of necessary overhead from the initial stages of a project to its final demobilization.
3. The scheme of organization should be designed to absorb the maximum of indirect and facilitating and servicing work in the project headquarters, leaving the field organization free to put maximum direct effort of men and machines upon the on-the-ground job.

4. Time is a vital element for all emergency projects. It is essential that organizing be done against definite time schedules which must be met for maximum accomplishment. Time scheduling will become more intensive as the action program progresses. As rates of accomplishment for various units and activities are determined by actual practice, the time schedules may require fairly frequent and important shifts and adjustments in manpower, material, and equipment.

5. Financial limitations are always a vital element in determining the scope of project, and in organizing and conducting the work. This subject will be discussed in greater detail later in connection with the financial control function.

Procurement and Supply Service

The greatest potential threat to maximum accomplishment, especially under severe time limitations, is idle men and machines. The greatest probability for idle men and machines is failure of the supply lines. Best results have been obtained in the past by centralizing procurement and supply in one unit in the director's office. This unit must be under the immediate direction of a man who is both an able administrator and procurement officer. The job often involves obtaining kinds of equipment and materials ordinarily used by the Forest Service, but far in excess of the usual requirements, and other highly specialized equipment and materials not commonly used. Some items may be in short supply Nation-wide.

Manufacture of some items may be necessary and often involves adjustment of manufacturers' delivery schedules as between the Forest Service and other customers. Assistance from the Washington office and the Department procurement offices in locating required material, and in obtaining adjustments in customer deliveries and delivery arrangements for the Forest Service is frequently necessary. Large manufacturing and supply concerns, as well as small, are generally sympathetic and willing to assist in meeting needs. Not infrequently they will pool their resources to do so. Also, they will hold supplies on tentative orders for reasonable periods.

There are three general classes of equipment and materials for which planning and early procurement action are essential and simultaneous.

1. Equipment, materials, and supplies needed for constructing and equipping all area headquarters, offices, and camps.
2. All heavy construction and transportation equipment needed for the duration of the project, and which is apt to be in short supply or may require a considerable period for assembling.
3. All specialized equipment and materials needed in large volume, or which may be difficult to obtain.

The first "feelers" on availability of the above classes of materials should start as soon as there is sound reason to believe there will be a project. This will be in advance of detailed planning, and on the basis of tentative estimates of requirements. Tentative delivery schedules based on the best possible estimates of time of need must be set up, and action taken to effect deliveries in accordance therewith. For example, field operational units will be installed over a short period in accordance with a time schedule, and time of need for various items of equipment and supplies will vary accordingly. Even 2 or 3 weeks' allowance for manufacture and delivery may be very important both to suppliers and the project. In setting up time schedules, reasonable allowance must be made for more rapid accomplishment on the action program than the plans provide. Tentative orders and delivery schedules should be converted to firm orders as rapidly as circumstances (usually available funds) will permit. Suppliers can be kept "on the hook" only a limited time if they have firm orders elsewhere, even though they are sympathetic and cooperative.

Sources of equipment and materials are many and varied—Department of Agriculture and Forest Service, other departments and agencies, large and small manufacturing and supply concerns, and even small local shops and second-hand dealers. The major point here is to get a good grasp of the magnitude of the job at the earliest possible date, and push it just as hard as estimates, plans, and money will permit. Don't hesitate to request the Chief for his, and through him the Secretary's, assistance in dealing with other bureaus and departments and large business concerns. Go as high as necessary with large manufacturers and suppliers, railroads, air freight, and trucking companies. Often, however, it is the fellow down the line who, if he can't do the job, can tell you where to get help. It is surprising, sometimes, how many people will help you when you need it, if you treat them right, and they really want to sell you something.

Establishment of headquarters with all appurtenant facilities, and facilities for area administrative units and field operation units, will follow closely on the initiation of procurement action. This may require considerable construction work, transportation equipment, and large quantities of other equipment and supplies essential to these setups. Also, large quantities of equipment and materials needed in the field work will start moving in. Then the whole job of procurement and supply intermingles kaleidoscopically and continues so until the field action program is in full swing.

This job demands top-flight organizing from the very start. Time schedules must be established and met, constant touch maintained with changing situations as to supply of various items, and constant touch maintained with location of shipments en route. Orderly and accurate record-keeping systems must be established and maintained of receipts of equipment and material, shipments to field units, financial obligations, etc. Unless a better than good job is done from the start, a chaotic situation can easily happen, resulting in duplication of orders, misunderstandings with suppliers and shippers, errors in orders, errors in property and financial accounts, dumping of large volumes of equipment and materials beyond field units scheduled needs and ability to handle, spoilage, and financial loss.

The following pointers, to which experienced procurement officers will be able to add, can be used to speed up or assure deliveries on schedule, and to facilitate handling of equipment and supplies:

1. Shipments of vital materials, if necessary to meet time requirements, should be made by the fastest means of transportation available. Railroad express and air freight are time and money savers if the need is great. Good judgment is required, but increased shipping costs often can be more than offset by making

fast shipments and avoiding or minimizing losses due to delays in delivery of essential supplies.

2. Routings for all long-haul railroad freight and truck shipments and daily reports on location of shipments en route should be unfailingly obtained from the transportation companies. Companies are glad to do this. Freight cars can easily be lost for days in big terminals or en route. Such delays may be very costly.

3. All railroad freight shipments should be under "red tag manifest." This speeds up transit, and makes shipments easier to locate en route.

4. Demurrage charges may be avoided by good scheduling. Sometimes they can be avoided through arrangements with traffic people to sidetrack near the point of destination until needed.

5. The "packaging system," which Region 1 developed with its "packaged camp" years ago, should be used to the limit to insure deliveries to field units in orderly condition. It is a tremendous time and effort saver.

6. The wall chart or desk chart method of maintaining records by time schedules of requirements, obligations, orders, receipts, and deliveries is a "must" that should never be slighted.

Contractual Services

Frequently various phases of the work can be organized, and action initiated and conducted more effectively through contracts than by force account. Heavy construction equipment, even when owned by the Forest Service, may require excessive time for shipping to the job from many points, and heavy transportation costs. Also, experience has been that time is required usually for extensive repairs on many units at project expense to put the equipment in reliable condition for use.

It is always necessary to contract flying service where a large number of planes are needed. Feeding of labor has been handled by contract on a number of projects and this method was found to be very efficient and economical.

In general, the advantages of contracting are: It saves time in getting organized and into action. It reduces Forest Service requirements for supervisory personnel. It is less costly and more efficient in many instances than Forest Service force account, all things considered. It is good public relations. Conversely, shipping in large amounts of Forest Service or other Government equipment, when there is good private equipment available and possibly idle, or failure to use efficient local services, is poor public relations.

Requirements for effective and economical contractual services are:

1. Dependable and financially sound contractors.

2. Clear and precise specifications and other contractual conditions and stipulations.

3. Full understanding with contractors of working conditions, type of country in which they will work, and what is expected of them.

4. Inclusion in the contract of all the supply and maintenance services, in addition to the primary work. This puts the contractor on a self-dependent basis and lessens opportunities for disagreements.

5. Adequate supervision of contract work to insure that contract specifications, time requirements, and other contractual provisions are met.

Full advantage should be taken of the authority under bid procedure and, if necessary, authority to negotiate contracts to obtain financially sound and dependable contractors. Many contractors work with the same enthusiasm and spirit as does the Forest Service group itself. On the other hand, poor, undependable, financially hard-pressed contractors will multiply all the problems and conditions that good contractors will alleviate.

Personnel and Labor

The personnel functions for both administrative personnel and labor can best be organized in one unit.

Administrative and Facilitating Personnel

The quality of the administrative and facilitating personnel recruited for emergency projects is usually the least of a director's worries. On moderate-sized projects the organization is usually made up entirely of Forest Service people recruited Service-wide. On large projects a major part of the key positions are filled with Forest Service personnel. Response to the need for assistance is usually good, although there is considerable variation in response from different Forest Service units. An experienced director can forecast where most of his help will come from, but can rest assured that wherever it comes from, it will be 99 percent good, capable people. Failures of personnel to meet the requirements of emergency projects are not due in most cases to lack of ability on their regular assignments. Most failures, which should be weeded out as soon as their peculiarities are demonstrated, fall under two general categories:

1. Lack of adaptability to the generally extreme change in working conditions and tempo of the new job and to the omnipresent necessity for high speed, effective action in spite of the lack of accustomed guides. Some temperaments just can't be adjusted to the "churning" of emergency work. But others are stimulated to extraordinary accomplishment by the challenge to their skills, ingenuity, and resourcefulness.
2. The ego of some people is such that they cannot work effectively, even though they may have high capabilities, in a closely integrated and closely controlled unit.

Staffing

The director, his immediate staff, and key line field officers should be men with a considerable background of administrative experience and of known capacities as administrators. The director, especially for short-duration jobs, should be allowed to select as far as possible his key men from those with whom he has worked previously. He will then know their strengths, shortcomings, and peculiarities. He will have a good working knowledge of his key manpower and will be able, with a minimum of delay, to make assignments and delegate authorities and responsibilities.

Encumbents of key positions should preferably have had experience in a similar type of work, but this is secondary to other qualifications, such as adaptability to a new type and character of operations, organizing ability, leadership, ingenuity, resourcefulness, courage, and boldness; coupled with good judgment, physical stamina, and the ability to work with others harmoniously and under pressure. Since operations seldom continue for long in accordance with plans, key officers must be able to meet successfully and quickly important changes in plans, recurring crises, and emergencies. They must be able rapidly to knit a force of men, gathered from hither and yon, with widely varied experience, into an integrated, cohesive striking force. They should be able to single out men with special skills and talents and place them where they will contribute most.

Ability to foresee an approaching need for changes in operations as planned, and to meet these with a minimum of disruption, is highly important. There are many who can literally hammer out the immediate and tangible job, but those who can do this and also foresee important approaching eventualities are few. Equipment and mechanisms of one kind and another often have to be devised or altered to meet particular needs. A few able "gadgeteers" are of inestimable value. Supervisors and inspectors of the effectiveness of the primary work should be well trained and highly competent.

Assignment of Duties and Responsibilities

A written statement of duties and responsibilities should be given each administrative, facilitating, and technical person assigned to or appointed on the project. These statements should be clear and definite, and should be discussed in person with the employee by the officer under whom he is to work.

Morale

High morale and good camaraderie are essential to successful accomplishment. In spite of all that can be done, the best organizing, practices, and procedures that can be developed in a short time fall short of the desired efficiency. Morale and will to do has to be a backlog for accomplishment. There are many devices for effecting and maintaining high morale, often in the face of severe discouragements. Most of them are common to good personnel management anywhere, but they should be used with assiduous attention on emergency jobs. Some of these points are as follows:

1. Recognize the essentiality of each person in whatever position he or she occupies.
2. Recognize good performance wherever it occurs.
3. Encourage competition between units. Then check closely to assure that it doesn't result in slighting the job.
4. Provide as comfortable quarters, working conditions, and facilities as the project will permit.
5. Give as free play as possible to the natural group leaders. These are often other than those assigned to key positions who have to be good leaders also.
6. Watch for overfatigue and require rest if necessary.
7. Watch for the person who keeps on pulling more than a full load in spite of some ailment, and see that he gets proper

rest and attention. There are many who are constitutionally opposed to showing any weakness, and they will keep on well beyond the point of safety if not pulled off.

8. Provide some forms of recreation.

Labor

Recruitment of suitable labor in needed amounts is often a real problem. The woodsman type, needed for most short-duration projects, is becoming increasingly hard to find. Contacts should be established with all sources of labor supply. Transportation costs for labor to the job and return should be paid, if necessary. Payment of transportation should be conditioned on a minimum period of work. The problem of supplying and holding labor will be decreased if a good mess and comfortable quarters are provided. Laborers accustomed to the outdoors don't mind camp life, but they want good grub, clean surroundings, protection from the elements, warmth, orderliness, and a place to keep their personal belongings in good shape. Forest Service standards for sanitation and camp construction will meet these conditions.

Some recreational facilities should be provided, such as Forest Service or other movies, transportation for Saturday-night trips to nearby towns, reading material, and cards or other games as each situation indicates.

Electric lights are cheaper and offer less fire hazard than gasoline lanterns. Water should always be analyzed for purity. State health departments will make the analyses. Provision should be made for prompt and adequate medical attention in case of sickness or accident.

Rules of camp conduct and care of quarters should be posted and enforced. There are still many itinerant laborers who are loyal to the job and take personal pride in sticking through to the end, even though conditions may be rugged. These people deserve a great deal of respect and as many of the comforts as can reasonably be provided in camps or other quarters.

Equipment Maintenance

Equipment in good operating condition is essential for maximum accomplishment. Adequate facilities and supplies for current conditioning and repair of small tools and specialized equipment should be provided. Facilities should be set up at some place where these classes of equipment can be readily centralized for a high-production job. There is nothing more discouraging to good crews, often working competitively, than equipment in poor condition.

Maintenance of transportation and other motorized equipment in good condition is one of the very important elements in sustaining high production. Equipment on emergency work is subjected to long hours of sustained, heavy use. Light and heavy transportation equipment may be operated over rough, rocky roads; and these, dust, mud, and other conditions cause heavy wear and tear. It is essential that adequate provision be made for maintenance of equipment with the minimum of time in the repair shop. Preventive maintenance can generally be supplied with mobile repair outfits. Equipment repair shops may be needed on or near the job for heavy repairs, or arrangements made with existing Forest Service shops or commercial garages.

CONTROL

Close control is essential to optimum efficiency. Administrative and operating authorities provide a significant element of control. Money is one of the indispensables of an emergency project and systematic procedures should be established without fail to assure it is used properly and with sound economy. Other elements significant in control are technical specifications, communications, training, safety, and records and reports.

Authorities

Procurement and administrative officers frequently require authority beyond the administrative limitations customarily imposed in order to act with required expediency. There should be no hesitancy to request waiver of usual limitations, if needed, and full delegation of the chief's or the secretary's authorities. However, requests for such broader authority should be made with full recognition of the accompanying increased responsibilities. Waiver of limitations usually concerns authority to negotiate purchases and contracts without bid procedure, limitations on overtime, hours of work, etc. These are a very fruitful source of complaints of favoritism, unfairness, and lack of economy and efficiency. So these authorities should be used only when necessary to meet requirements of getting the job done, and then only with careful consideration and good judgment, and with the knowledge they may provide the basis for complaints or investigation of project activities. Bid procedure should be adhered to as much as possible, and often it can be used to move rapidly, through telegraphic communication and other means.

When authority to exceed usual limitations is used, it is good practice to file a justification statement at the time the transaction is made showing why it was necessary to depart from the usual limitations and the steps and action taken to protect the Government's interest.

Estimating, Budgeting, and Financial Control

Sound financial management is a first essential in the operation of any emergency job, large or small. Finances are often the source of greater and more intensive concern on projects in the 1- to 3-million-dollar class than on larger projects because the smaller project is apt to be less adequately financed, and operates over a short, high-pressure period with as great or greater daily or weekly expenditures than may occur during similar periods on the larger projects of longer duration.

Estimating for appropriation or other over-all cost of project purposes is usually completed in advance of detailed planning for and organization of the project; therefore, the project is always organized against a fairly definite actual or estimated financial limitation. Also, an almost foregone conclusion is that money will be one of the more scarce commodities. This may be beneficial because it forces economy and requires systematic, efficient work. On the other hand inadequate funds, even under the best obtainable efficiency of use, may threaten the success of the entire venture.

No phase of an emergency job is more brimful of real, dependable worries than money. Estimating, reestimating, budgeting and rebudgeting, and accompanying financial adjustment are omnipresent, recurrent work. Probably 75 percent of the major policy and operating decisions will be against a backdrop of financial condition. It is, therefore, essential that financial control be strongly organized throughout the project and that the organization be equipped to provide accurate financial estimates, expenditure and liability records, and accurate accounting of financial status at not greater than weekly periods on fast-moving, short projects, and often daily toward the close of the work. For example, on the night before the close of the Tussock Moth Project, the financial situation was up to date at 12 midnight, and at 2 a. m. it was possible to decide in favor of spraying 2,000 newly discovered infested acres.

Organization of financial control should also provide for close scrutiny of records such as time reports, contracts, purchase vouchers, and other documents, particularly in the early phase of operations, but continuing for the duration, for the purpose of coordination, obtaining uniformity of procedure, and effecting economies. Close scrutiny of documents in connection with expenditures is one good way in which to get rather quickly a fairly good survey of how the outfit is handling many details of the job. The people who do this, however, must have a good working knowledge of the project and the ability to recognize those things of real importance among the many that cross their desks.

Technical Specifications for the Primary Work

Strict adherence to the technical specifications for the primary work of a project is essential to success. Failure to meet such specifications can nullify the entire operation. Technical specifications will be established by the Forest Service or cooperating bureaus. For insect control projects they are established by the Bureau of Entomology and Plant Quarantine, and this Bureau cooperates in the inspection needed to assure satisfactory compliance. Close supervision of current work should be provided to assure meeting the technical requirements. Follow-up inspection or checking of effectiveness should be in accordance with a determined, systematic method. It should be as close behind application as the nature of the work will permit a determination of results, in order to provide corrective action, if needed, with a minimum of expense and lost time.

Communications

A rapid and dependable communication system is indispensable. Public utility systems provide this generally from project headquarters to field area headquarters. From field area headquarters to outlying work centers, radio must usually be depended upon. Do not place dependence on outmoded equipment and amateur radio technicians to keep the system working effectively. Get well-trained, experienced men, and, if possible, up-to-date equipment.

Unusual dependence upon the telephone, telegraph, and radio is necessary within the project and Service, and in communicating with business concerns. Fast, and also proportionately expensive, communication is essential in keeping the work coordinated; in meeting operating exigencies; in keeping supplies moving on schedule; and in keeping current and reliable progress and financial records. In fact, written material on most short-duration jobs is largely limited to essential supporting material for financial records, permanent progress records, personnel transactions, property accounting, and so on. Current business moves too fast to be handled by letter writing.

Indoctrination

The change-over from regular Forest Service work to the whirlpool of emergency work requires some degree of indoctrination. This is usually accomplished during the early phases of the project in the regular course of work and by organized training. Most of the indoctrination has to do with measures taken to effect both rapid accomplishment and economy. In part, these are paradoxical, and may be an abrupt departure from the usual practices so well ingrained in most forest officers. However, big telephone bills incurred in locating and negotiating for scarce and essential supplies and high costs for fast shipping methods, when incurred with judgment, will save thousands of dollars that might otherwise be lost through idle men or enforced ineffective work.

Training

There is often a reluctance, because of time demands, to take time for training, but well-planned and intensive training will pay tremendous dividends in a very short time. Most projects, because of a lack of precedents, are replete with standards, procedures, methods, and practices set up initially in part on a theoretical basis. Intensive training, even for short periods, will disclose weaknesses in such procedures and methods, and will also establish uniformity and increase speed and effectiveness of performance to a degree which can be attained in no other way. Training in the application of techniques necessary to meet requirements of the primary work is highly important. The training job must be carefully planned, both as to how it will be done and time that can be devoted to it, but it must not be neglected.

Safety

Emergency projects usually embrace work with a high injury hazard. Hazards are enhanced by the urge for speed and by the accompanying tension. The class of labor employed may be poor and unaccustomed to the type of work. Rugged terrain and weather conditions frequently contribute to the injury hazard. All emergency project operations should be carefully studied by well-trained safety engineers and the safety training and accident-prevention work should be carried on throughout the life of the project.

Records and Reports

The largest share of the business of short-duration projects is conducted verbally by telephone and radio and in group conferences. High-level decisions are often made by telephone conference. Telegraph is also used frequently, but the volume of important business so handled is small. This results in a dearth of written material in connection with many phases of the work, and it is necessary to provide for essential record keeping for reference and reporting purposes. Definite assignments of responsibility for recording, with a description of what is required, should be made. Essential records and reports, which may not be made as a result of established Forest Service procedure, but which should be required and on which definite action should be taken to obtain, are as follows:

1. An accurately dated, chronological record of all important events. This should record such matters as origin of project, initial decisions and action to initiate a project, submission of appropriation estimates and amounts requested, passage of appropriation and amounts, initiation and completion of planning work, initiation of action program, dates when action got fully under way with numbers and size of units and numbers of administrative personnel and labor in action, important high points of accomplishment, important adjustments in program, important decisions, initiation of demobilization, completion of demobilization. This report should be designed to provide a quick, brief, concise, and accurate review of the important occurrences and when they took place.
2. Telephone conversations and group conferences. Memorandum record of the important points covered by telephone conversations should be made immediately following by the project officer, or one of them, who was a party to the conversation. A secretary should be designated for group conferences, and should prepare a memorandum of record immediately following the conference.
3. Procurement. Memorandums of telephone conversations with suppliers, contractors, and other business concerns. Memorandums covering negotiations in connection with negotiated contracts for supplies or services, and justification statements in cases of negotiated contracts for supplies and services.
4. All complaint cases should be thoroughly investigated and made of record.
5. Financial records. Fund accounting records will, ordinarily, be taken care of through the regular Forest Service fiscal procedures. There is, however, need on every project for special cost accounting for estimating and budget adjustment and reference purposes. The particular items upon which costs are required should be determined by the director, and the system needed to obtain and record them should be worked out with the financial control office and placed in effect at the start of the project.
6. Organization charts and administrative records. Organization charts, designs for camp and other construction, records of facilities required, charts showing basis for estimates of equipment, supplies, and labor requirements should be kept for permanent record. All graphic and other progress reports should also be a part of the permanent record.
7. Final report. A final report should be prepared after the close of the work. The form of the report will vary, of course, with different projects, but in most cases it should cover the following points:

a. The conditions which resulted in the need for an action program; the values at stake, the results of preliminary surveys of the situation, and other determinations, such as preliminary cost estimates and special problems.

b. Each major phase of the project, in narrative form. All facts necessary to give a clear description of the character of the work, how it was performed, special problems encountered, and how they were met, should be included. Sufficient statistics should be used to show the size or volume of the work and the accomplishments.

c. A description of important special features, particularly those factors which contributed to high accomplishment, and those which retarded the work.

d. A general financial report, and at least an over-all unit cost figure. It may be desirable to show the relation of overhead to total cost.

e. Cooperative action, and the part played by each party to the cooperative effort.

f. The safety record.

g. Contractual work performed, satisfactoriness of contracted services, cost of contractual work in relation to total operating costs. Advantages and disadvantages of using contract services.

h. Public attitudes.

i. The chronological record.

The character of each project will suggest other points to be included in final reports. Those on the Tussock Moth and the Colorado Spruce Beetle Projects provide good examples, and are available, as are organization charts and appurtenant information. It should be borne in mind in their preparation that final reports will be the primary reference from which to obtain material for answering questions and providing factual data for congressional questions or hearings; for distribution to Federal, State, and sometimes private cooperators and to forest schools; and for use in planning and operating future projects. Suggestions based on errors made or pitfalls encountered in previous projects should be included where possible.

COORDINATION

Coordination absorbs about nine-tenths of the direct effort of the director and his immediate staff. All the various functions and activities must be synchronized and kept progressing together. They are interdependent and interlocking. Delay in one phase means delay all along the line, financial loss, and loss in accomplishment. Coordination starts with the initial planning work and continues as a major responsibility until the project is completed.

During the planning and early action stage, the director personally does most of the coordinating between activities. As the tempo of the job increases, he delegates definite responsibilities to his immediate staff, who assume the attendant coordinating function, but he constantly maintains touch with the over-all and much of the detail activities and continuously functions as a coordinator. Key field administrators have an important coordinating function for their respective units, and also assist the director and his staff in over-all project coordination.

Coordination may be effected by:

1. Having planners occupy the same or adjoining offices. They can then go into a huddle any time it is necessary to pull together various aspects of the planning work. Also, they can ask questions back and forth and obtain answers currently and with minimum demand on time. The director keeps in touch and sees that gaps are kept closed. This sounds inefficient, but in actual practice it is a most effective arrangement.
2. Daily staff meetings in the early stages of planning and action.
3. Meetings at least every 2 weeks of director's staff, division chiefs, and field area supervisors and selected members of their staffs throughout the duration of the project.
4. Field inspection or, preferably, expediting by director and members of his staff. The director on short-duration projects should have at least one immediate assistant who spends most of his time in the field, and another who spends most of his time in the office and acts as both a divisional coordinator and expediter and an expediter between headquarters and the field supervisors. There is little if any place for the usual type of inspection on short-duration projects. Field men on the director's staff should have the experience and capacity to both inspect and take immediate corrective action if necessary. They should have the ability to judge when they should refer to the director for advice.
5. Maintaining a fast telephone and radio communication service and immediately reporting on any matters requiring action.
6. Periodic and graphic progress reports for each major field operating unit (for example, a camp) and for an area. Camp reports to be maintained in each camp, camp and area reports in area headquarters, and area and project reports in project headquarters. Progress reports should be posted without fail at the end of regular specified periods.

COOPERATION

Emergency projects invariably involve cooperation with other Federal, State, and local agencies, and often with private interests.

Federal Agencies

The purpose of the emergency projects of the last few years has been insect control in timber. On these projects the Bureau of Entomology and Plant Quarantine has been the technical agency, and the Forest Service the action agency. The Forest Service as the action agency always has a large scale procurement program, and can and should handle procurement for the Bureau of Entomology and Plant Quarantine, whose requirements are relatively small. Many Bureau of Entomology and Plant Quarantine requirements can be filled from Forest Service supplies or in connection with procurement for Forest Service requirements without the need of special action.

The Weather Bureau very frequently provides valuable long-time weather records and current forecasts of weather conditions. For instance, the Weather Bureau established a 24-hour weather reporting service, which was of tremendous value, at the field headquarters of the Tussock Moth Project at Moscow, Idaho.

There are existing cooperative agreements between the Forest Service and most, if not all, the other Department of Agriculture bureaus and agencies. These usually adequately cover cooperative action for an emergency project. If not, supplemental agreements should be prepared.

Emergency projects may require cooperation with Federal agencies outside the Department of Agriculture. For both Tussock Moth and Colorado Spruce Beetle, essential equipment of classes not otherwise available were obtained from the Army. Obtaining such equipment may require the help of the Secretary's office. The Army, however, is usually quite willing to loan equipment on their terms if no higher priority demand exists.

The Fish and Wildlife Service may wish to study the effects of airplane spraying on fish and game, which is very desirable. Covering cooperative arrangements are very simple.

Sometimes the projects involve treatment of lands controlled by other departments. In such cases definite agreements should cover authority, action, and responsibilities of each agency. Agreements should be in written form, and signed by the proper representatives of each agency.

Cooperation with other bureaus of the Department of Agriculture and other departments may be much more extensive on projects of longer duration operating outside the national forests, and with a wider scope of activities than indicated in the foregoing examples.

State and Local Cooperation

State agencies, counties, and municipalities usually have a very direct interest in an emergency project. State, county, municipal, and private lands may be intermingled with Federal lands and may have to be treated to control an insect infestation. State laws generally cover the authority of the State to take action on State, county, and private lands to abate an occurring or threatened disaster. Also, the State and private landowners may make a financial contribution for the work on State and private land in accordance with an agreed-upon proportionate share. In some cases it may be necessary for the State legislature to enact laws enabling State agencies to cooperate effectively with the Federal government and to appropriate funds for the purpose, as was the case with Idaho for the Tussock Moth Project. In this case the State also authorized the Forest Service to act as its agent in the conduct of the action program.

This sort of a situation can be very complicated, and requires very close cooperation between the Forest Service, other interested Department of Agriculture bureaus, and State representatives in developing the formulas for joint action, and in working out the details of cooperative agreements. The State should handle cooperative arrangements, if possible, with county, municipal, and private interests. The Tussock Moth Project would not have been feasible and would not have been undertaken without such cooperation.

Simple types of cooperation can be carried out without formal agreement. They are the voluntary type of assistance arising from a recognition of the importance of a project and a desire to help. Such assistance may be very valuable both from the standpoint of direct assistance and from the standpoint of good will of State and local interests. For example, State health departments can provide inspection of sanitary facilities at camps or other quarters, analysis of water supply for camp and headquarters, first aid, and medical attention. State labor departments can give direct assistance in recruiting facilitating personnel and labor. Counties can assist in providing headquarters facilities. They may also include such things as connecting temporary Forest Service quarters with municipal water and sewage disposal systems; providing for loan or rental of county road and transportation equipment; and performing actual road construction and maintenance work.

In actual practice the field for obtaining State and local assistance is much wider than indicated by the very limited examples given, and includes the State extension services, forestry departments, land boards, agricultural colleges, State departments of agriculture, and other State agencies. The kind of assistance needed and given will, of course, depend on the type of project, character of work, etc., but the opportunity is always present to obtain very valuable assistance.

Public Relations

Forest Service emergency projects of short duration are concerned with the abatement of threats to forest resources; threats which are in the class of disasters. Those of long duration may be concerned with carrying on a specific conservation activity, such as Shelterbelt, or meeting a war or defense need, such as the Emergency Rubber Project. Sometimes there is a tendency to feel that time should not be devoted to carrying on public relations activities. Nothing could be more erroneous.

The project, itself, is very likely the result of an intense local, State, and possibly regional concern over threatened loss of a resource of great importance to the public welfare. Also, the people of the area concerned, and their representatives in Congress, have fought for the necessary appropriations. They should be kept informed, and this has been regular practice with the senators and representatives from the State or States concerned.

Regional, State, and local newspapers should be given news items on the progress of the work, methods of conducting it, and other matters of news value. Rest assured that the "curbstone experts" will be as busy as the "Monday morning quarterbacks." So show local citizens what is being done and why. "Show me" trips should be made, and the details of the work explained. All this will pay dividends in local support, and in the morale of the local project workers who otherwise may have to buck criticism. Favorable public sentiment is a mighty nice atmosphere to work in. It is usually essential to worthwhile projects, and it can be had without undue effort if a good job is being done.

Some criticism, but not too much, which will be made in spite of the best efforts, is also helpful in keeping the outfit alert and looking for leaks in efficiency. Take a constructive look at criticism and don't just shrug it off. There may be something to it, because no emergency job is ever the quintessence of efficiency.

Demobilization

The objective in demobilization is to dispense with personal services just as fast as need expires, and to dispose of all equipment, materials, and supplies by storage, proper placement for repair, or return to source in an orderly, efficient, and economical manner. The demobilization of each unit of the organization should be conducted so that it does not disrupt the continuity and efficiency of the efforts of other units, assignments for which will not be completed until a later time.

The first planning for demobilization on short-duration jobs should begin by the middle of the operating season. By that time progress records and estimates of remaining work loads by various units and segments of the organization should indicate when assignments may be heavily curtailed or completed. The heavy part of the procurement work should be over before the project field operations are more than one-half completed. Usually requirements for equipment and supplies will drop off by that time, and the services of several people needed earlier can be dispensed with.

As camps or other field units complete their assigned work and are not needed elsewhere, they should be "folded up," if possible one or two at a time, their equipment packaged either at camp or area headquarters, and stored or prepared for shipment to central storage and repair shops. Rolling equipment can also be moved in, inspected for condition, repaired in local project shops, or sent to central shops as need dictates. Personal services should be terminated as primary work is completed except for those needed in connection with packaging and shipping and other dispositions of equipment and supplies.

A DOZEN HINTS FOR DIRECTORS

Any person selected to direct an important emergency project must recognize at the outset that it will be a severe test of his administrative skills, ingenuity, resourcefulness, and physical stamina. But if one has a zest for adventure, the test of strength is stimulating and exhilarating. Below are a dozen hints for future directors. Some of the points have been mentioned heretofore. They will bear repetition.

1. Prepare for the job. One of the best ways to meet the test is through preparation. Study every phase of the project, and learn the requirements and problems from over-all planning and organizing down to the details. This includes the technical fundamentals. Learn the character of the landscape and its peculiarities.
2. Seek out those elements of the job which present particularly difficult problems and go after the ways and means to meet them right at the start.
3. Boldness of decision and action will be necessary. Temper boldness with your own best judgment, but check your judgment with your advisors. On some matters the fellow down the line

may know more than anyone else about some piece of country, how to do a certain job, or some other matter that may affect an important decision. Seek him out and consult with him.

4. Do your best to foresee approaching problems and prepare to meet them. You can best do this if you are thoroughly familiar with all the ramifications of the project. Encourage your immediate staff and field administrators to do likewise.

5. Don't be concerned because a project is of great scope, regional in character, or of considerable duration. The bigger—the better. The moderate-sized projects demanding the rapid assembling of large volumes of equipment, supplies, and material, lots of manpower, and a rapid and high rate of accomplishment with a minimum of money and time can be the real headaches.

6. Recognize there are two elements that produce high accomplishment: A high level of efficiency of operations, and a high level of morale and will to do. Both are essential. The director is personally responsible for developing them.

7. Recognize that accomplishment is the result of group effort. You can't do the job by yourself.

8. Keep yourself in the over-all position and delegate the work. You will have plenty to do, and you need to be where you can always look out over the whole job.

9. Hunt out weak spots in the organization and performance and take action to bolster them up.

10. Guard against violation of fiscal regulations, and insist upon economical use of money. Short-cutting fiscal regulations never saves time or money in the long run. Insist upon the utmost economy circumstances will permit, and have a reserve for the unknown. You never know when you will face an expensive exigency.

11. Insist on compliance with the technical specifications for the primary work.

12. Watch your own degree of fatigue. Overfatigue is an enemy of judgment.

AN INTEGRATED PROGRAM OF ACTION FOR EMERGENCY PROJECTS

CHARACTERISTICS OF EMERGENCY PROJECTS

1. Usually without precedent in character of work, size and scope, and lack of tested procedures.
2. Equipment requirements same as those of Forest Service, but far in excess.
3. Requirements for highly specialized materials, which may be in short supply.
4. Time limitations and demand for rapid and effective action.
5. Factual information usually not complete.
6. Involves cooperation with many interests.
7. Presents direct challenge to adaptability and skills of personnel.
8. Demands successful accomplishment.
9. Requires ultimate in planning and organizing.

PLANNING

1. Agree on:
    a. Size and scope of work to be done within definite time limits.
    b. Best possible performance standards, methods, and procedures—then stick to them.
    c. Estimated average accomplishment by units of men and machines—allow for surges.
2. Cover:
    a. Entire organization, down to line crew.
    b. Requirements for headquarters, office space, equipment, etc.
    c. Service of supply.
    d. Time schedules.
    e. First firm base on procurement action.
    f. First firm base for estimates of financial and budget requirements.

ORGANIZING

1. General scheme of organization.
    a. Separate unit of operation under Chief's office or within a region.
    b. Director, with full authority and control.
    c. Assistance and advice from regional divisions.
2. Organization of project operations.
    a. Complete and adapted to peculiar requirements.
    b. Simple and limited to essential personnel.
    c. Designed to absorb maximum of all facilitating and servicing work in headquarters, leaving field men free for maximum direct effort.
    d. Time scheduling must be followed closely and may require adjusting as work progresses.
    e. Financial limitations determine scope of project work.
3. Procurement and supply.
    a. Centralize as one unit in director's office.
    b. Obtain assistance from regional office and Washington office, and from "fellow down the line."
    c. Establish headquarters and appurtenant facilities.
    d. Pointers to assure deliveries: (1) Use fastest transportation; (2) obtain routings; (3) ship freight under red tag manifest; (4) avoid demurrage charges; (5) use package camps; (6) use wall charts.
4. Contractual services.
5. Personnel and labor.
    a. Select personnel carefully from Forest Service.
    b. Prepare statements of duties and responsibilities.
    c. Set up separate division of recruitment.
    d. Recruit woodsman type of laborer.
6. Equipment maintenance, centralized.

CONTROL

1. A first essential of a project.
2. Authorities provided to expedite work.
3. Accurate financial control vital; 75 percent of major policies and decisions against backdrop of finances.
4. Greater concern on 1- to 3-million-dollar project.
5. Organized throughout all units.
6. Provision made for continuing checks.
7. Adherence to technical specifications.
8. Dependable communication system indispensable.
9. Programs of training and safety set up—tied in with State health departments.
10. Records and reports necessary for reference and reporting purposes.

COORDINATION

1. Absorbs nine-tenths of direct effort of director and immediate staff.
2. At planning stage director does most—later staff drawn in.
3. Means of coordination:
    a. Planners occupying same or adjoining offices.
    b. Daily staff meetings.
    c. Biweekly meetings of director's staff, division chiefs, field area supervisors, and selected officers.
    d. Field inspections by director and staff.
    e. Fast telephone and radio services.
    f. Periodic and graphic progress reports.

COOPERATION

1. Federal agencies. By cooperative agreements, informal where possible.
2. State and local agencies. New State laws may be needed in some instances. Services of some agencies, such as State health and labor departments and county and city units, may be needed.

PUBLIC RELATIONS

1. Pressure of project should never push public relations program aside.
2. Project itself result of public interest.
3. Provide for news and radio releases.
4. Provide for "show me" trips.
5. Take constructive view of criticism.

DEMOBILIZATION

1. Objective: To dispense with personnel and dispose of all equipment, materials, and supplies quickly, efficiently, and economically.
2. Should not disrupt efforts of units finishing up later.
3. Begin planning by middle of operating season.

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